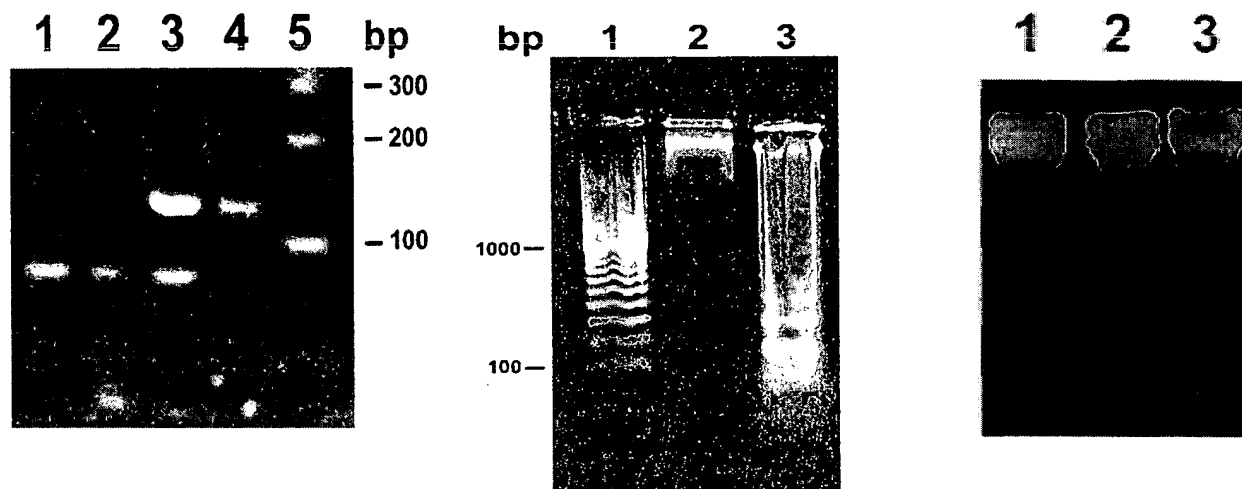


EXHIBIT 3



MCF-7 Cell Caspase-3 Gene 47 bp Cletion Restored by Human Genomic DNA Fragments.

Left Panel: Electrophoresis of amplification products of 47 bp caspase 3 deletion region DNA from MCF-7 cells in 10% polyacrylamide using primers A1 and A2, stained with ethidium bromide. Lane 1, DNA from chromatin of intact MCF-7 cells; lanes 2 and 3, DNA from chromatin of MCF-7 cells cultivated in medium containing 0.3 mg/ml human placenta DNA for 5 and 40 days, respectively; lane 4, DNA from human placenta; lane 5, DNA fragments with known molecular weight.

Middle Panel: lane 1, DNA ladder; lane 2, control untreated MCF-7 cells show no apoptotic chromatin fragmentation after incubation with 0.1 mg/ml TNF- α for 10 hr; lane 3, MCF-7 cells treated with fragmented genomic DNA underwent apoptosis after incubation with 0.1 mg/ml TNF- α for 10 hr.

Right Panel: lanes 1 and 2, 0.1 mg/ml TNF- α is unable to induce apoptotic chromatin fragmentation in MCF-7 cells upon incubation with cells for 10 and 48 hours, respectively; lane 3, apoptotic fragmentation is induced in L929 cells that have no mutation in the caspase gene upon 10 hours incubation with TNF- α .

In an analogous experiment (data not shown) the incubation of the MCF-7 cells with fragmented salmon DNA did not induce changes in the caspase gene.